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How are environmental non-governmental organizations setting the agenda on artificial intelligence governance?

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ABSTRACT

Big AI firms advocate for permissive regulations in artificial intelligence (AI) upscaling, while disguising energy and climate costs. As a counterpoint, I map emerging agenda-setting efforts on AI governance from environmental non-governmental organizations (ENGOs) regarding energy and climate issues, through thematic and network analyses of recent reports supplemented by personnel interviews. First-movers include hybrid organizations combining digital and environmental interests and international ENGO branches driven by technology-oriented personnel. Nevertheless, there is a piecemeal but collectively coherent playbook regarding AI risk and governance. Reports deploy 'justice' as a bridge between digital, energy, and climate movements. Key contexts include the erosion of safeguards to power concentration in Big AI, expanding extractivism, and constraints on civic activism. Personnel explore links between internal AI usage protocols and external campaigning, and emphasize that the ENGO sector must resist being divided and conquered while coalition-building in AI governance.

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1. Introduction

The artificial intelligence (AI) development sector – particularly 'Big AI' companies – are leading efforts to hype AI as transformative for global innovation and governance. Meanwhile, they de-emphasize the resource costs for model training or data centers, and potential misjudgements in environmental decision-making by AI tools (Dauvergne 2020, Khanal *et al.* 2025). Without clear and independent counterpoints, the foundational

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discourse on AI could be co-opted by profit-oriented actors who strategically ignore societal and environmental costs.

Environmental non-governmental organizations (ENGOs) should be at the forefront of grounding such concerns. In this paper, I ask: How are ENGOs setting the agenda for AI governance in the context of energy and climate governance? I examine agenda-setting via content (what positions ENGOs are taking) and capacity (what resources they can marshall to develop and disseminate them). I conduct a textual thematic analysis of key ENGO outputs (e.g. reports) as well as original interviews with ENGO members involved in the development of AI governance within their organization. I concurrently use network analysis to map the actors, relationships, and outputs surrounding the ENGOs involved in the study. Through these actions, I investigate the formation of narrative coalitions within the non-profit sector on how to govern AI in the context of climate and energy governance – including leading actors and positions, emerging tensions, and proposed steps forward for ENGOs.

ENGO sectoral efforts to engage with AI governance are comparatively new but escalating. First-movers have typically not been traditional or major formalized ENGOs, but collaborations between hybrid organizations combining digital and environmental interests, umbrella campaigning networks, and autonomous branches of ENGO federations are driven by technology-oriented individuals or internal teams exploring links between internal AI usage protocols and external campaigning formation. Nevertheless, across these efforts, there is a piecemeal but collectively coherent playbook of themes and tactics regarding AI risk and governance in formation. 'Justice' is deployed across key reports and calls-for-action as a bridge between digital, energy, and climate issues and movements. Further contexts include the erosion of policy safeguards to the concentration of power in Big AI, expanding extractivism, and constraints on civic critique of AI-driven industrial competitiveness. Early movers seek to expand sectoral networking, but stress pragmatic compromise rather than consensus.

Section 2 reviews early and ongoing contestations between academic, industry, and NGO actors to frame AI in the context of climate and energy governance. Section 3 outlines the research design. Section 4 Results contains the results, bringing together analyses of thematic content, and organizational and networking capacity, to explore emerging networks. Section 5 discusses avenues for enhancing the agenda-setting capacities of ENGO in AI governance.

2. Literature review

Forceful constructions of AI potentials and governance come from the Silicon Valley 'hyperscalers' of OpenAI, Alphabet/Google, Microsoft,

Apple, Meta/Facebook, and Amazon. This club of frenemies – labelled 'Big AI' – consolidate power and shape governance by hyping the benefits of AI and creating dependence on its infrastructure and services (Van der Vlist *et al.* 2024).

Intergovernmental organizations and governments are developing positions on AI governance. Governmental positionings are clustered in the Global North and China; most states favour AI innovation through active state-led facilitation or permissive (lack of) regulations. In the minority, the European Union (EU) collectively favours a degree of regulation and monitoring (Djeffal *et al.* 2022). Industry 'capture' of national innovation policy and AI regulation is a growing concern (Bremmer 2025).

Francisco and Linner (2023) assess policy documents from the United Nations (UN), EU, and the World Economic Forum, and suggest that high-level decision-makers and industry representatives emphasize potential AI advancements towards economic growth, top-down administration, and sustainability (i.e. the Sustainable Development Goals or SDGs), while earmarking concerns about transparency, misinformation, security, and inequities in capacity and impact. The overall tone, however, is not of precaution. AI's risks are 'understood as an optimization problem' to be ironed out by technical progress, resource efficiency, and the 'transformative potential of technologies' (Francisco and Linner 2023, p. 4). Recently, the International Energy Agency (IEA) released an *Energy and AI* report (International Energy Agency (IEA) (2025) noting that that AI can 'unlock major efficiency and operational gains' (p16) in the energy sector, and that AI-driven emissions are rising but remain a fraction of the overall picture.

This study examines early positions, actions and networking deployed by ENGOs to confront 'techno-solutionist' AI visions (Safir and Sharma 2025), in the context of energy and climate governance. In doing so, it connects several bodies of work.

First, studies assessing AI capacities in environmental and climate governance contain a stronger emphasis on ethical, digital, and socio-environmental concerns – e.g. the resource costs of AI applications, supply chains and data centers, as well as the potential to perversely shape decision-making due to being trained on incorrect data (Dauvergne 2020, Vermeulen and Pyka 2024, Muldoon *et al.* 2025). This study also joins an emerging literature on environmental, technology, humanitarian, and labour NGOs that are beginning to engage with AI (Schmitz *et al.* 2020, Nost and Colven 2022, Efthymiou *et al.* 2023).

Envisionings of AI applications and their societal and environmental challenges emerge in my data – but my focus is on the role of ENGOs in developing and disseminating these themes as part of their efforts to build AI governance. This hearkens to the well-studied literature on ENGOs in global environmental governance (Keck and Sikkink 1998, Allan and Hadden 2017,

Nelson and King 2020) and successful coalition formation (Alcock 2008, Van Dyke and Amos 2017, Brooker and Meyer 2019, Nohrstedt and Heinmiller 2024). The works of Hajer (1993, 1995) on discourse coalitions and the strategic participation in shared discourses and storylines, as well as on competition between discourses for dominance in civic and policy spaces, are relevant to the emerging efforts of ENGOs vis-à-vis Big AI.

Finally, a variety of content analysis frameworks have been applied to positionings on AI potentials and governance: e.g. the media (Cools *et al.* 2024), policy documents and governance proposals (Ulnicane 2022); governments and intergovernmental organizations (Francisco and Linner 2023); and the AI development and consultancy sector (Safir and Sharma 2025). These studies trend towards critical, noting that industries and governments over-emphasize systemic advances for economic growth and societies, and de-emphasize disinformation, security concerns and resource costs – in line with efforts of Big AI to shape AI governance (Van der Vlist *et al.* 2024). My study builds on this literature with a direct focus on recent ENGO outputs.

3. Methods

First, I note the ENGOs whose members participated in our interviews, as well as our protocols for sourcing and interviewing participants. Regarding content, I undertake a textual framing analysis of interview transcripts as well as key reports and other outputs produced by those ENGOs to convey positions. Regarding capacity, I again combine interview insights with ENGO reports to qualitatively gauge the organizational, networking, financing and research capacities of those ENGOs.

Soliciting ENGOs and interview participants

Due to the focus on AI in the context of energy and climate, I aimed initially at major, traditional, 'legacy' ENGOs operating internationally. I combined this with a second process soliciting ENGOs involved in the production of reports on AI in the context of energy and climate (see Corpus of materials).

The solicitation process followed the snowball method. ENGOs were contacted through their general information emails or press offices. These ENGOs and their key outputs regarding AI are listed in Table 1. Two ENGOs did not reply to interview requests – but I include them in Table 1 because interviewees cited them and their key reports as relevant.

Some relevant NGOs have mandates beyond traditional environmental foci, in technology governance and digital rights. Some organizations do not characterize themselves as NGOs, preferring 'co-op' or 'research institute'. All organizations nevertheless share a non-profit model. I maintain the umbrella use of 'ENGO', as 'NGO' and 'non-profits' are too broad, and

Table 1. Environmental NGOs with participating interviewees or key written outputs.

Name	Number of interview participants	Key organizational characteristics and mandate	AI-related written outputs used in our study's analysis – See Table 2
350.org	1	Campaign-focused grassroots organization around renewable energy	
Beyond Fossil Fuels	Did not participate	Campaign network of 60 European ENGOs. Legally a part of CAN Europe.	• *System Overload* (2025) • *Within Bounds: Limiting AI's environmental impact* (2025)
Climate Action Network Europe (CAN Europe)	1	Network of + 200 European ENGOs	
Engine Room	Did not participate	Small organization with consulting services, focused on digital justice and technology governance	• *At the confluence of digital rights and climate and environmental justice: a landscape review* (2022)
Friends of the Earth – England, Wales and Northern Ireland (Friends of the Earth EWNI)	1	UK-based (minus Scotland) branch of a decentralized internationally federated ENGO; largely independent in decision-making	• *Harnessing AI for Environmental Justice* (2025)
Greenpeace International	1	Coordinating organization of an internationally federated ENGO	• *Artificial Intelligence Threats to Climate Change* (2024) • *Clicking Clean: Who is winning the race to build a green internet?* (2017)
Green Screen Coalition	1	Group of individuals from different organizations, focused on digital and climate justice	• *Within Bounds: Limiting AI's environmental impact* (2025)
Green Web Foundation	1	Small non-profit, focused on reducing fossil fuel reliance for digital infrastructure	• *Within Bounds: Limiting AI's environmental impact* (2025) • *Thinking about using AI?* (2024)
Union of Concerned Scientists	1	US-based science advocacy organization	
We Are Open Co-op	2	Small organization with consulting services, focused on digital justice and technology governance	• *Harnessing AI for Environmental Justice* (2025)
World Wildlife Fund – Sweden (WWF-Sweden)	1	Swedish branch of an internationally federated ENGO	• *How AI can Unlock Green Transformation* (2025)
World Resources Institute	1	Non-profit global environment research organization	

environmental dimensions to governance remain a uniting focus. The list in Table 1 is not a comprehesive representation of the field, but is nevertheless indicative of early ENGO activity trends in AI governance.

Interviewees performed various planning, research, and leadership roles at their organizations, often in technology and innovation teams (I report implications in Section 4.2). Interviewees typically caveated that they could not speak as organizational representatives; formal positions on AI were either under discussion, or were not being sought due to the bottom-up or branch-based structure of their NGO. Nevertheless, the interviews reflect internal debate, and positions and policies in formation.

The early state of the field and small pool makes it easy to identify interviewees, if associated with their organization and position. Accordingly, I identify interviewees only by a numerical designation (e.g. Interview 1–9) that does not correspond to the order presented in Table 1.

Interview protocol

Our semi-structured interviews lasted 1 hr and included the questions:

(1) What positions and initiatives have your organization taken on AI in the context of climate and energy governance?
(2) Has your organization taken any (key) positions or initiatives on the role of innovation in the governance of the human environment more broadly, before AI became significant?
(3) What other NGOs do you consider your closest allies? Which seem opposed to your agenda?
(4) Does your organization collaborate with government agencies, intergovernmental organizations, pro-business NGOs, consultancies, innovation actors (e.g. start-ups, funds), or research institutes and universities?
(5) How might this information be made useful to your organization or networks?

Corpus of materials

Materials consist of the interview transcripts with ENGO members ($N = 9$; Section 3.1, Table 1) and key written outputs that include reports and briefings ($N = 8$; Table 2). As with solicited ENGOs, the written outputs are not exhaustive, and were sourced through a combination of recommendations through interviews and an online search. I used Google Scholar and combinations of 'NGO', 'environmental NGO', 'non-profit', 'artificial intelligence', 'climate', and 'energy'.

Table 2. Key recent environmental NGO reports on AI.

Title	Citation	Authoring organizations	Contribution
Clicking Clean: Who is winning the race to build a green internet?	Cook *et al.* (2017)	Greenpeace	Report: Maps the energy performance of major information technology companies' digital infrastructure (naming and shaming logic)
At the confluence of digital rights and climate and environmental justice: a landscape review	Kazansky *et al.* (2022)	Engine Room	Report: Maps cross-cutting themes and challenges between digital and climate justice.
Artificial Intelligence Threats to Climate Change	CAAD *et al.* (2024)	Friends of the Earth; Greenpeace; Global Action Plan; Climate Action Against Disinformation (CAAD); Check my Ads*; Kairos*	Report: Maps energy and resource costs and societal implications of AI infrastructure; develops 3 governance principles for reglators, companies, and goverments.
Thinking about using AI?	Smith and Adams (2024)	Green Web Foundation	Briefing: Creates a protocol through which a companies (or any actor) can gauge the environmental impacts of AI use, development, and procurement.
Harnessing AI for Environmental Justice	Hilliger *et al.* (2025)	We Are Open Co-op; Friends of the Earth England, Wales and Northern Ireland	Report: Develops 7 principles and associated practices to guide campaigners on using AI in the context of climate justice and digital rights
How AI can Unlock Green Transformation	Jansson and Bengtsson (2025)	World Wildlife Fund – Sweden; AI Sweden*	Report: A primer on AI opportunities within food retail, and more broadly towards green transformation – often training or using AI to curb its own threats.
System Overload: How data centers could throw Europe's energy transition off course	McArdle and Terrase (2025)	Beyond Fossil Fuels	Report: Maps energy and resource costs and societal implications of prospective data centres upscaling in Europe; makes 5 recommendations to mitigate.
Within Bounds: Limiting AI's environmental impact	GSC*et al.* (2025)	Green Screen Coalition (GSC), Green Web Foundation, Beyond Fossil Fuels, Aspiration*, critical infrastructure lab*	Joint statement: Signed by 130+ organizations for the AI Action Summit in Paris, 2024. Makes 15 demands through which AI systems can be made compatible with planetary boundaries.

The asterix* refers to an organization that could not be classified as an ENGO.

Thematic analysis and network analysis

I conduct a thematic analysis, a framework for qualitative content analysis applied across the social sciences and policy studies (Clarke and Braun 2017). Thematic analysis is a parsimonious framework capable of categorizing data representing content (what individuals, organizations, or networks are arguing) and capacity (what resources and collaborations those actors can muster) garnered through interviews and outputs (Tables 1 and 2). Framing and narrative analysis – used by a number of studies on AI governance – is a strong fit for content but less so for capacity.

Materials were coded with the Atlas.ti (version 25.0.1 (32922)) program for qualitative data analysis. Data (Low 2025) was grouped into four overarching themes (with sub-themes): (A) Positions and initiatives, (B) Barriers to agenda setting, (C) Mandate and organization, and (D) Outputs and relationships.

Theme A corresponds to content: arguments developed by ENGOs to emphasize and strategically deploy interpretations of AI risk in order to mobilize forms of governance. There are synergies here with framing analysis, where frames are selective and forceful depictions of reality intended to spur political action (Van Hulst *et al.* 2024). I focus on ENGO arguments, the synergies and tensions across networks, and how arguments aid alignment or collective action.

Themes B (barriers to agenda-setting), C (mandate and organization), and D (outputs and relationships) correspond to capacity. Networks comprising actors, relationships, and outputs are a significant component of the mapping of ENGO capacity in AI governance. I adhere to the qualitative branch(es) of social network analysis (SNA) that focus more on the evolving process and nature of relationships in the network (Heath *et al.* 2009). I map emerging networks by examining the authorship of (shared) key reports, and by interviewing participants on shared initiatives as well as perceived allies and opponents in the non-profit sector and beyond (see interview questions). Theme D (outputs and relationships) is most significant for bounding the network analysis.

4. Results

Section 4.1 shows how ENGO reports and interviewees conceptualize the risks and governance of AI. Section 4.2 describe the capacities of ENGOs to engage with AI, and maps networks of ENGO outputs and relationships. Section 4.3 show synergies and latent tensions in ENGO activities.

All results present how ENGOs (through reports) or their personnel (through interviews) make claims about AI, rather than as fact. I report the results through summarizing text, rather than through extensive quotations. The text, however, corresponds directly to the themes in Table 3 (Section 4.1),

Table 3. Themes on AI risk and governance.

Theme	Sub-theme	Representative quotations
AI and incumbent industries in the carbon economy	Power accrues towards Big AI.	. . . the cloud computing market is clearly dominated by just a handful of American big tech companies who also happen to be the leading providers of AI tools and services . . . further entrenching these market players that are vastly distorting not only markets but also now, as we can see, politics. - Interview 6
	AI is expanding fossil fuel extractivism.	And not only is Big Tech actively marketing AI technologies to oil and gas companies, but those companies are also entering the energy generation market, due to the huge energy requirements of data centres. – Hilliger *et al.* (2025) p10
	Climate disinformation is a natural consequence of joint interests between Big AI and Big Fossil Fuel.	Fossil fuel companies and their paid networks have spread climate denial for decades through politicians, paid influencers and radical extremists who amplify these messages online. Generative AI will make such campaigns vastly easier, quicker and cheaper to produce . . . Adding to this threat, social media companies have shown declining interest in stopping disinformation, reducing trust and safety team staffing. – CAAD *et al.* (2024) p7
	Industry competitiveness is prioritized as part of a multipolar innovation arms race, which deters critique.	Some of the biggest challenges is now that national and EU industrial policy has become intertwined with the rollout of these infrastructures . . . And that makes it very hard to make arguments that are about: 'Do we need so much computation? And who owns the benefits from that computation?' - Interview 6
	Safety and transparency is being rolled back due to industry pressure.	And you know that Big Tech gets around to any of the regulations that civil society puts into place . . . they help write some of them. They lobby to have their particular phrases put in. . . . And I think that was interesting when JD Vance came over to Paris for that AI Summit. Literally, the UK delegation went back home and changed the name of the UK Centre for Trust and Safety and just removed the word 'safety'. - Interview 8
	Dissent is increasingly criminalized.	Usage of big tech especially with the Trump administration . . . Who's to say that they won't shut us off at some point by labelling us as a criminal organization? – Interview 4

(*Continued*)

Table 3. (Continued).

Theme	Sub-theme	Representative quotations
	Public ownership and buy-in regarding AI debate to counter Big AI is necessary.	It is crucial to have public interest representation in decisions about what computation is used for and under what conditions. The AI market is dominated . . . by the world's most powerful tech companies with no powerful accountability mechanisms. Data centres, subsea cables, and manufacturing sites are expanding across the world without community consultation and with insufficient disclosures . . . space is shrinking for public debate and collective action, as climate and environmental activism is increasingly criminalised . . . – GCS *et al.* (2025) p5
Internal policy on AI usage, tool development and procurement	Not every problem requires AI to solve.	. . . a lot of the things we need for climate action and to stay within the 1.5 is actually not really about technical innovation – it's social and organizational. And so we've done a lot of work to try to uplift those things that already exist . . . without trying to say, 'Let's build [AI] and 10 years later we might see the results.' - Interview 6
	AI tools can provide operational benefits, and experimentation is necessary.	So, I think part of the [internal] guidelines is obviously also the resource usage, in terms of energy usage, water usage, mineral usage, etc . . . However, we do want people to experiment, to understand, OK, is there for certain functions or for certain groups, a use case to be made with AI that has so much value or benefits that it supersedes any resource usage? – Interview 4
	NGOs and businesses must integrate consideration of direct environmental impacts into internal policy.	If we deploy AI, what does all this mean for the environment? More specifically, what does it mean for those of us working in organisations with a commitment to reduce the environmental harms resulting from our activities? What mitigating strategies are available and how do these align with other strategic concerns such as productivity and profitability? – Smith and Adams (2024) p7
	Internal protocols help develop external policy agendas.	. . . we implemented an internal 'appropriate usage' policy for artificial intelligence. It is mostly to reduce [the] organizational risk regarding staff, ensuring that they don't put any personal information of themselves or other staff, or donors and supporters into any of the generative AI tools . . . But regarding the topic of like environment and climate change – we are still developing that part of what's appropriate in terms of usage as it relates to, for example, energy implications, water implications and emissions . . . it's definitely a concern of a lot of our staff . . . how is that impacting our values, our mission? – Interview 7

(*Continued*)

Table 3. (Continued).

Theme	Sub-theme	Representative quotations
External campaigning policy	Recognize material and human costs of complete AI systems.	… we need to take a whole life-cycle approach to both software and hardware … every stage of the process, from mining and extraction of the materials, to manufacturing and data centre construction, to end-of-life reuse and disposal [as well as] data collection through model training and deployment to maintenance and retirement. In addition, for both software and hardware there are … Direct effects [that] include the consumption of energy and resources, whereas indirect effects refer to the increased environmental damage …… Higher-order effects refer to the ways in which AI use may exacerbate existing inequalities … - Hilliger *et al.* (2025) p21
	Transparency mechanisms must be enforced.	I think we want and need transparency over – at the very least – carbon emissions, but ideally, wider environmental impacts of these tools … Probably for reasons of commercial confidentiality, AI companies are not willing to share information … The first step is transparency, and then we can work towards accountability from there. - Interview 5
	Energy justice: Additional renewables capacity, and better accounting systems, should be adopted by the AI sector.	… new demand should be met with new generation … a switch to renewables by data centres will therefore only support Europe's climate goals if companies commit to bringing new and additional renewables online. – McArdle and Terrase (2025) p20 … you have to be able to prove that every hour that your data center was in operation, it was matched with renewable energy that was generated in the region locally, that it was additive to the grid's capacity, and it's matched within the same time frame, not cumulative over the year. – Interview 6
	Energy justice: Renewable energy should be prioritized for essential services.	Essential sectors of society – like schools, hospitals, and households – must have priority access to energy … over energy uses such as AI workloads that do not directly lower emissions. – McArdle and Terrase (2025) p24
	Climate and social justice: The AI sector must reduce emissions and social harms across global supply chains.	Marginalized communities continue to bear the brunt of climate change and fossil fuel production, and studies are already finding that AI's carbon footprint and local resource use tend to be heavier in regions reliant on fossil fuel … .immediate efforts [are needed] to integrate climate and environmental justice into AI policy and incorporate input from frontline communities … – CAAD *et al.* (2024) p6

(*Continued*)

Table 3. (Continued).

Theme	Sub-theme	Representative quotations
	Digital justice is inextricable from energy and climate justice.	. . . we adopt the term extractivism as a common lens . . . 'green extractivism' – the process of drawing on finite resources in extractive ways to develop 'green' technologies, and 'data extractivism' – the process by which data on territories, lands, and people is used to continue the extraction of resources and expropriation of the commons. – Kazansky *et al*. (2022) p12 . . . one of our conversations had been with other funders in the digital rights space going, 'OK . . . how do we build bridges with the climate environment movements knowing that we both know that these digital tools create and accelerate harms?' But there's also really important lessons we learned from the digital rights space, for example, things around digital security. [It was] a peer learning moment for these organizations. - Interview 6

Table 4 (Section 4.2), and Table 5 (Section 4.3), which contain quotes speaking to those themes. This compromise permits ENGO personnel and materials to speak in their own words to a degree.

4.1. AI risk and governance

Relying on key reports and interviews, I map themes on the prospective risks and appropriate governance of AI broadly held across the individuals and ENGOs engaged with in this study (Table 1; Table 2). I caution that these themes do not necessarily represent formal policies or a sectoral consensus. Rather, these themes reflect intra- or inter-ENGO conversations and policies-in-formation – examined further in Capacities and networks (capacities and networks) and Synergies and tensions (synergies and tensions).

ENGOs highlight perverse collaborations between the AI sector and industries reliant on the carbon economy. Big AI's technical headstart and a lack of competitive alternatives for platforms in the Global North concentrates technical dependence, confers financial and political clout, and permits them to shape governance initiatives or lobby governments for increasingly permissive regulations. Moreover, there are joint interests between Big AI and Big Fossil. AI has burgeoning energy requirements and is entering energy generation markets; AI tools are being used to expand oil and gas operations under the guise of making extraction and production more efficient. AI tools also engender climate denialism and disinformation, aiding fossil fuel companies while generating income for companies with joint media and digital/AI capacities – e.g. Meta and Alphabet.

Prioritization of AI as an engine of growth in a multipolar innovation arms race – e.g. between US and China, with implications for the EU and others – deters critique. Industry pressure (AI companies on governments) and international pressure (the Trump administration on the UK and Europe) are causing safety and transparency mechanisms to be rolled back. In a broader context, ENGOs note that environmental and climate movements and organizations have come under harsh or spurious legal assault in recent years, and that resistance to Big AI must navigate an era in which dissent against powerful industries is increasingly criminalized. One interviewee cites the draconian punishment of climate activists, or the 'Strategic Lawsuit against Public Participation' (SLAPP) lawsuit aimed by a fossil fuel company in North Dakota at ceasing the operations of Greenpeace in the US (Interview 4).

Interviews and reports then point to a common strategy in formation: an 'internal' policy on AI usage, tool development and procurement within the ENGO, and an 'external' policy framing the challenges and governance of AI for campaigning with that ENGO's core audiences. All the interviewees note that an internal policy is currently being or had only recently been formed at

Table 4. Themes on ENGO capacities and networks.

Theme	Sub-theme	Representative quotations
ENGOs have differentiated objectives and capacities that shape engagement with AI.	Working with the private sector vs. activist focus.	On AI and climate – as a whole, we don't take government funding. And we, obviously, as an activist focused organization will often be campaigning against government policies – or rather, for different government policies – and also campaigning against corporate interests. So I think we're quite different from WWF as an example . . . they have obviously very deep engagement with the commercial sector and the governments . . . - Interview 2
	Varying expert, funding, and staffing capacity to assess emerging issues.	In terms of our collaboration around AI, it's been really early and very spotty on an international basis. A lot of that is probably because a lot of other [branches] are smaller than ours . . . We're one of the bigger ones with about 150 staff – and there's only myself and one or two other people who are working part time on AI here. Imagine if you're a six-person organization – you've almost got no brain space to think about AI. - Interview 5
	Do ENGOs need a theory of technology?	How should we as an organization position ourselves when a new piece of disruptive technology – whether it be AI, or maybe quantum technology comes down the line? . . . And I feel like the best way, the best time, to intervene in these things is before they become multi-million [dollar] industries. You want to get in early with the researchers, the early stage businesses, before they gather enough momentum. and loads of venture capital funding behind them. or whatever. You want to shape the environment that they work in early . . . rather than being reactive once it becomes a big industry. Can we be proactive and shape it before it does? – Interview 5

(*Continued*)

Table 4. (Continued).

Theme	Sub-theme	Representative quotations
AI engagement tends to be led by ENGO technology-oriented persons or teams.	Tech teams lack resources for assessing AI, having many other priorities.	In non-profits like this, at least on my side, I'm not only working with AI, right, so I have multiple projects. So the time that I can dedicate to this work related to AI is relatively small. We don't have any staff, anyone that is also specifically working with AI. We do have a couple of fellows that are working on research that uses machine learning, on climate change and things like that, but not someone with dedicated time to creating the positions that we have as an organization externally. - Interview 7
	Internal policy on usage might not be well connected to the formation of external policy.	One of the issues I felt with working with big NGOs is: if you were dealing with the innovation person, you're not necessarily dealing with the right person from an AI perspective because of the size of them. You realize, 'OK, I've met the AI person, but it turns out all they're interested in is operationalizing it.' They're part of the IT department or they're doing machine learning with studying whales from satellite images. - Interview 5 So I think that at a bigger NGO the IT department, for example, might be trying to come out with some sort of AI policy for the organisation. But that policy actually being implemented and being understood all the way down at the direct campaigning level really depends on how coordinated these different functions within the organisation are. And … these functions are not actually that well connected. - Interview 8
	Are ENGOs (compelled to be) tech-skeptical? Might this reduce engagement with AI?	I think it's also fair to say that the non-profit community as a whole is perhaps not the most technically savvy or aware sector, with some notable exceptions. So I think there can maybe be aversion to thinking around technology issues. – Interview 2 The phrase I've got in my head is 'audience capture' … So, it is quite difficult for NGOs to put out a statement of any nuance … because of the binary nature of discourse on social media, and because that's the main vector for campaigning for NGOs, it's extremely difficult for them to put out any position that isn't like, 'Stop this from happening now!' - Interview 8

Table 5. Themes of synergies and tensions between ENGOs.

Theme	Representative quotations
Structure vs. agency	Structure: [But] there's so many actual harms happening in the current mode, that calling or looking for AI sustainability solutions is a little bit of a misleading effort. . . . - Interview 6 Agency: . . . you can use AI and it doesn't make you an evil person. But there's an education and a literacy factor here: like, the people actually understanding the skills and competencies required to use all of the AI tools that are being thrown at us, and also to think critically about what those tools are. – Interview 8
Extended hype vs. normalization	Extended hype: Perhaps the frenzy of activity around AI, with its corresponding environmental impacts will go the way of hype around the Metaverse, or Blockchains. However, this doesn't appear to be the case. The largest tech firms' continued guidance to stakeholders is that they intend to keep making massive investments in new AI-focussed data centres regardless. – Smith and Adams (2024) Normalization: Being a technologist myself, I think that when the sort of real cost structure of these things set in, there may actually be potentially less AI use than people think . . . People use it now for a lot of trivial things, when in the future I can imagine it being efficiently built into a large number of products or being deployed with high efficiency in a very localized sense. – Interview 3
Digital vs. climate justice	I remember going to some civil society conversations where there were people thinking about AI . . . But they were tending to think about it from: AI is going to encode racial biases; AI is going to, cause inequities; possibly AI is going to end with the collapse of the world and democracy and things like that. Again, not much of much room for a conversation about the environment or climate change. If people talked about AI at all in the context of the environment, they tended to talk about it from the perspective of: AI will help with energy efficiency, or maybe or help us design better solar panels. - Interview 5
First-movers support vs. over-represent (smaller) organizations	First-movers support (smaller) organizations: But the thing is then that lot of them are smaller – even small, small organizations who really don't have capacity to work on AI, who don't have the technological capacity to think if it would help them or how we could use AI in the fight against climate change. So . . . our role is to support them on even bringing this to them and supporting them on their AI – whatever they want to do with it. - Interview 1 First-movers over-represent (smaller) organizations: . . . in this kind of space where you've got a lack of campaigning maturity around a particular area, one organisation ends up representing lots of other organisations . . . So basically, the whole sector is represented by a couple of individuals and one organisation, rather than each individual organisation having a position . . . which is, I don't know, not a very mature position to take. - Interview 8

(*Continued*)

Table 5. (Continued).

Theme	Representative quotations
Diversity and agency vs. safety in numbers	Diversity and agency: . . . we would never say like [our organization] has this position on this thing, because we respect the autonomy of our members. - Interview 8 Safety in numbers: A lot of NGOs tend to move at the speed of other NGOs . . .. I'm in the middle of writing a AI strategy for the organization and one of my colleagues – and this happens with every strategy – says, 'You must write a section on what other NGOs are doing'. Because there's . . . they feel like there's safety there. – Interview 5
ENGOs seek further networking – the aim is a working overview rather than consensus.	. . . the job is not for us to come up with one collective vision of what 'responsible AI' looks like or what the future of AI looks like. Our job is to make sure our organisations have those conversations rather than sleepwalk into the space . . . ideally you would hope they would say, somewhere down the line, 'It may not be our first priority, but we'd probably quite like an AI that was environmentally sustainable.' It might be their tenth priority, but at least it's on the map. - Interview 8 We've made the case and now we need more support to coordinate and be most effective also in a time of financial scarcity . . . it's important to make sure that we are able to pool resources, work smartly and also work across different movements, because I think one of the challenges has been if we work in a narrowed, siloed way, we can be divided and conquered and it's more important, I think, to be working with labour groups, migrant right groups and other groups who are work in finding places like that is how we can push together. – Interview 6

their ENGO. In contrast, almost no interviewees explicitly confirm external positions on AI (with the exception of the participant from the Green Web Foundation); but all interviewees point to evolving efforts to form external positions.

Internal policy features four sequenced themes depicting appropriate AI usage. The first is the need for a protocol for prioritizing AI use – this theme emerged in all interviews, and is also the subject of a Green Web Foundation briefing targeting businesses confronting AI tools (Smith and Adams 2024). A protocol for AI usage would be relevant at different scales: not every internal organization task need resort to AI, nor does every socio-environmental governance issue require technical innovation as much as social innovation. Often, such a protocol grows out of existing efforts to secure data privacy for ENGO members using digital tools. Secondly, *a priori* judgment against AI for many purposes is unfeasible, and experimentation is necessary to determine operational benefits and trade-offs. All interviews and materials not this as pragmatic, while the We Are Open and Friends of the Earth England, Wales and Northern Ireland (EWNI) (Hilliger *et al.* 2025) and WWF-Sweden (Jansson and Bengtsson 2025) reports are more optimistic about experimentation as ownership and agency. Thirdly, ENGOs must integrate consideration of direct environmental impacts into internal AI policy. This is the logical extension of a general call made towards organizations and companies, including Big AI (e.Cook *et al.* 2017, McArdle and Terrase 2025). Fourthly, creating internal protocols can help develop external policy and campaigning agendas. For example, several interviewees note that it could be difficult to campaign for measured AI use if their own organizations lack a consistent process for doing so. Internal protocol formation also connects research teams and/or branches of international ENGOs.

The 'external' policy aims at recognizing the resource and human costs of AI infrastructure, and at deploying AI for transformative impact in a green transition, combining elements of digital, energy, and climate justice. The most significant ENGO reports regarding the costs of AI are from Beyond Fossil Fuels (McArdle and Terrase 2025), We Are Open and Friends of the Earth EWNI (Hilliger *et al.* 2025), and Friends of the Earth, Greenpeace, and others (CAAD *et al.* 2024). The clearest recommendations for deploying 'just' AI come from Engine Room (Kazansky *et al.* 2022), We Are Open and Friends of the Earth EWNI (Hilliger *et al.* 2025), and the joint statement signed by 130+ organizations for the AI Action Summit in Paris (GSC *et al.* 2025).

Costs are depicted as systemic, combine elements of digital, energy and climate injustice, and highlight five dimensions. These are: the 'vertical' AI stack of layered computing infrastructure and services, the 'horizontal' national and international political systems of regulation and trade through

which AI development is filtered; the life-cycles and supply chains of resource (e.g. critical minerals, energy, water) extraction, usage and waste, and infrastructures of semi-conductor manufacturing, data centers and cables; the distinction between hardware and software (e.g. data centers vs. data collection); and the distinction between direct and indirect costs (e.g. operational resources vs. wider impacts of AI use on energy systems, climate misinformation, or vulnerable populations). ENGOs emphasize site- and community-based impacts; impacts aggregated across systems allow AI developers to shade over locale-specific harms.

Transparency mechanisms on resource and human costs must be enforced. These range from legal regulations to voluntary frameworks for guiding AI usage (to make AI 'net-positive', Jansson and Bengtsson 2025; the Green Web Foundation's business-facing framework, Smith and Adams 2024) or naming-and-shaming hyperscalers for their energy costs (Cook *et al.* 2017). A key criticism is that resource costs are strategically understated or suppressed by the AI sector. ENGOs warn that economic growth demands and Big AI's efforts at power consolidation are already leading to oversight rollbacks.

For energy justice: ENGOs recognize that there is insufficient renewable energy capacity to power rapidly expanding AI alongside existing societal needs. ENGOs place the onus on the AI sector to phase out fossil fuels in their own operations and drive the development of additional renewables capacity. ENGOs also call for improving accounting measures for purchasing renewable energy credits. Renewable energy capacity should be prioritized for essential public services and households, and distinguish between – and even halt – energy supply towards kinds of AI usage (much like the internal protocol for prioritization). ENGOs also recognize potential AI improvements to energy efficency: AI usage can be tailored to match excess renewable energy availability. For climate and social justice, the onus is again placed on the AI sector to assume responsibility, enhance transparency, and mitigate emissions and harms across the dimensions noted above: AI stacks, life cycles and supply chains, scopes of use and impact, and recognizing the bespoke nature of site and community impacts from resource extraction to data-center maintenance.

Digital justice is seen as inextricable from energy and climate justice. The earliest treatment seems to come from Engine Room (Kazansky *et al.* 2022) as 'green and data extractivism' (p12), but all ENGO reports note key confluences. The same kinds of low-income or otherwise vulnerable communities are exploited in substandard labour and environmental regulations as in data surveillance and manipulation. As noted above, the AI and fossil fuel industries are reinforcing each other's operations, and permitting climate denialism and misinformation. There is an opportunity for learning between NGOs in digital, energy, and climate issues, and for collective action against incumbent industries.

4.2. Capacities and networks

In this section, I use the interviews to explore the capacities and contexts that influence ENGO action and networking (which reports will not reveal).

Figure 1 depicts a network analysis of ENGOs, allies, and outputs (reports, governance initiatives) in AI governance. A key caveat: this network is not systematic. It is bounded by the data from participating interviewees, and centered on the ENGOs of which interviewees are members, as well as key reports that they or key allies helped produce (Table 2). Certain interviewees noted many collaborations undertaken by their ENGO or themselves; others described collaborations vaguely or declined to describe them for strategic reasons. Such emphases and omissions may mislead. The single nodes for CAN Europe, Beyond Fossil Fuels, and the European Environmental Bureau must be qualified – each is an umbrella organization or network representing dozens to hundreds of ENGOs. Similarly, a single node simply refers to the World Resources Institute working with all the 'major tech companies in the

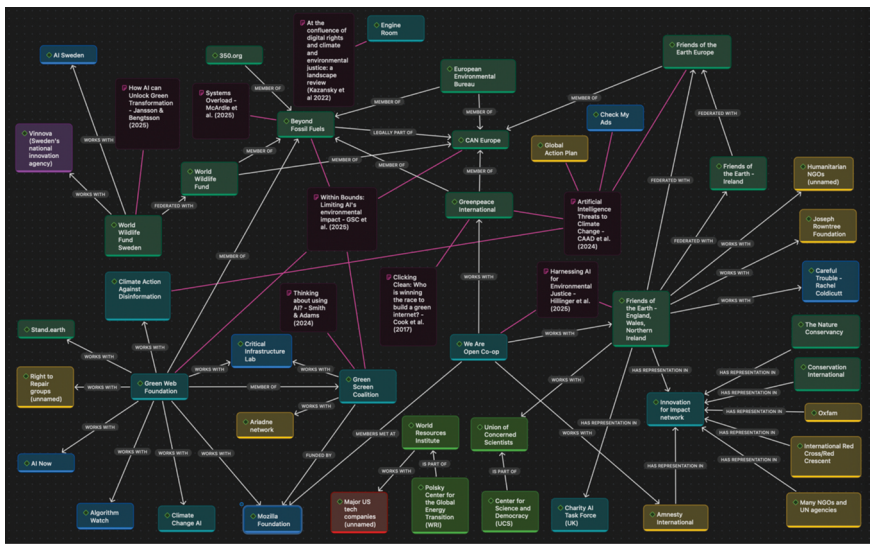

Figure 1. Network analysis of early ENGOs, allies, and outputs in AI governance. This figure was made with atlas.ti. The pink nodes are ENGO reports on AI governance listed in Table 2, with pink lines to other actor nodes noting co-authorship. The dark green nodes are more traditional ENGOs; light green are research-oriented non-profit institutes; turquoise are digital rights and sustainability organizations; light blue are digital rights organizations, yellow are humanitarian organizations, red are private sector actors, and purple are governmental agencies. The results are bounded by data from our participating interviews, from the following organizations: CAN Europe, 350.org, Greenpeace International, WWF-Sweden, Friends of the Earth ENWI, We Are Open co-op, World Resources Institute, Union of Concerned Scientists, Green Web Foundation, and Green Screen Coalition.

US'. Finally, the significance of certain actors is underplayed as they are not strictly ENGOs or did not participate in interviews – examples include the Mozilla Foundation, the AI Now Institute, the consultancy Careful Trouble (led by Rachel Coldicutt), the Innovation for Impact Network (a group of non-profit innovation leads), and Engine Room, whose report (Kazansky *et al.* 2022) stands out as an early synergy of digital and climate justice.

Nevertheless, this emerging field indicates that leading civic actors in energy- and climate-facing AI governance include branches of international federations, umbrella campaigning networks, and smaller, hybrid organizations combining environmental and digital interests. Examples of these hybrids: Green Web Foundation campaigns for sustainable digital infrastructure, Green Screen Coalition for a wider array of digital and environmental justice perspectives, and We Are Open is a consulting co-op in digital and sustainability issues that does not see itself as an ENGO. Despite the presence of (branches of) Greenpeace, WWF, and Friends of the Earth, interviewees agree that most traditional ENGOs have not been driving the development of AI governance. In this vein, CAN Europe and Beyond Fossil Fuels act as umbrella organizations for much larger networks of ENGOs, but the engagement of most of their constituents is unclear.

Organizations differ in partnerships across issues or sectors. Interviewees from Friends of the Earth EWNI, We Are Open, Green Web Foundation and Green Screen Coalition report the most networking activities and outputs between digital (blue), humanitarian (yellow), environmental (dark green), and hybrid (turquoise) organizations. Others from CAN Europe and 350.org indicate stronger engagement with traditional ENGOs. There are very few collaborations (reported on) with governmental bodies – e.g. WWF Sweden and Vinnova (the Swedish innovation agency).

These networks also reflect varying emphases between different ENGOs and outputs. Materials from Beyond Fossil Fuels, Greenpeace, Green Web Foundation, Green Screen Coalition, CAN Europe, and 350.org – which cluster more strongly – tend to emphasize Big AI's efforts to concentrate power, as well as socio-environmental costs, with a more precautionary tone (e.g. McArdle and Terrase 2025, CAAD *et al.* 2024; GSC *et al.* 2025). Friends of the Earth EWNI and We Are Open edge more towards calls for stronger public experimentation and ownership to counter practices and norms set in place by Big AI (e.g. Hilliger *et al.* 2025). WWF-Sweden (Jansson and Bengtsson 2025), the Union for Concerned Scientists, and World Resources Institute represent smaller, stand-alone clusters that match interviewee data as representing early forays into AI governance.

Interviewees point to two broad themes that condition ENGO engagements. Firstly, even the small number of ENGOs engaged in this study have differentiated objectives and capacities. The majority of the participating ENGOs have engaged with the private sector on environmental and energy

topics, and are open to working with them to build digital and AI tools. A smaller number are activist-focused and do not accept funding or collaborate with governments and the private sector. ENGOs also have varying funding and staffing capacities to position themselves on emerging issues, and this is magnified in AI's fast-moving development. Research-oriented organizations such as the World Resources Institute and the Union for Concerned Scientists may have a comparative advantage in assessing emerging issues. Interviews from both cited research centers – respectively, the Polsky Center and the Center for Science and Democracy, where the energy transition and digital democracy condition how these organizations are beginning to assess AI.

Smaller, less formalized, more grassroots-oriented ENGOs have much less formal research capacity. Even within the comparatively well-funded internationally-federated ENGOs such as Greenpeace, WWF, and Friends of the Earth, national branch staff numbers can range from dozens to less than a dozen. Intra-federation collaboration also varies. Greenpeace and WWF have international offices that can help coordinate emerging issues; Friends of the Earth has relatively independent branches. Branches seem to have a fair amount of agency to drive action, ahead of or even without their federations. Members of the Friends of the Earth branch for England, Wales and Northern Ireland and the WWF branch in Sweden participated in the study, while representatives from both international offices confessed no strong engagement with AI governance at the time of contact.

Interviewees also raise questions about how ENGOs come to position themselves on novel issues. In some cases, ENGOs build on previous campaigning actions adjacent to Big AI. Greenpeace had previously published a report on major cloud infrastructure companies; Green Screen Foundation expanded into AI governance from work on green digitalization; 350.org is engaged in a campaign 'Tax Their Billions' that calls for added taxes on the fossil fuel industry and the extremely rich. Meanwhile, interviewees from the two research organizations (World Resources Institute and Union for Concerned Scientists) both cite a 'science-based' approach that stresses a period of assessment before deciding on policy, distinguishing themselves from organizations with clearer political orientations towards AI. Overall, organizational rationales are bespoke or unclear, and this constrains or delays collective engagement.

Accordingly, one interviewee argued that ENGOs need 'a theory of technology' that would help them anticipate the disruptive significance of emerging technologies and proactively 'intervene before they become multi-million [dollar] industries . . . You want to shape the environment that they work in early . . . rather than being reactive once it becomes a big industry' (Interview 5).

A second broad theme: reflecting the lack of clear organizational rationales to engage in AI, initial AI positionings are often mapped by ENGO technology teams, rather than from leadership or across the organization. The exceptions are organizations with more widespread digital competencies, such as Green Web Foundation and We Are Open co-op – which are also not traditional ENGOs. Otherwise, interviewees typically qualified themselves as: 'I'm just the tech person'. Some are members of the information technology (IT) unit within the ENGO; others are individuals with a technologist's or engineer's background. All face trade-offs in dedicating resources for assessing AI.

But whether from technology-oriented or traditional ENGOs, these personnel share a niche combination of expertise and interest in both digital and environmental issues. They seem crucial as bridges within and between organizations. Moreover, some interviews noted the Innovation for Impact network, a network of innovation department representatives from a range of (environmental, humanitarian) NGOs that houses regular discussions on emerging AI tools and governance. Unfortunately, the network itself did not respond to interview requests.

As noted in AI risk and governance, internal policies for AI use are being formed at many ENGOs, typically with the aforementioned 'tech person' in a leading role. However, interviews warn that the technology team's or individual's work on AI and internal policy might not be well connected to that ENGO's formation of external campaigning policy. This connection depends on the size and complexity of the organization, and on decision-making processes that are difficult to tease out from interviews. Technology teams might also have an operationalizing view towards AI tools, compared to the more critical ethos of campaigning or policy-facing parts of the organization. Indeed, several interviewees leaned towards the former.

On the other hand, some interviewees questioned whether traditional ENGOs in particular tend to be broadly skeptical of technology, reducing proactive engagement with AI. Similarly, others asked if many ENGO personnel may actually have a much more nuanced internal point of view on AI than they are able to externally communicate, and if ENGOs are compelled to be skeptical of emerging technologies to appeal to their core audiences.

4.3. Synergies and tensions

There is a core narrative being built on the challenges and appropriate governance of AI (Section 4.1). These networks are increasingly entwined, even if there are clear first-movers and not all capacities are equal (Section 4.2). In this section, I again rely on interviews to explore potential, even latent tensions between perspectives and organizations from Section 4.1 and

4.2. I share an aim with ENGO interviewees: to encourage discussion within the sector at a foundational moment for forging collective action.

Multiple interviewees voice a worry about the ENGO sector having either a utopian or dystopian conception of AI. Despite this, there was no such stark division among the interviewees themselves. All participants argue that AI constitutes a malleable, evolving collection of tools that can be engaged with, nudged, and resisted; all admit the looming power of Big AI and carbon economy interests in AI. There are degrees of emphasis rather than divisions.

Perhaps a 'structure versus agency' tension relates most closely to the utopian versus dystopian dichotomy. Some interviewees emphasize that adopting AI structurally favours Silicon Valley hyperscalers, and that ENGOs and civil society should therefore be vigilant about private sector and governmental pushes for AI development that reflect Big AI interests and co-opt discourses on climate, energy, digital rights, and sustainability. These interviewees do not call for rejecting AI wholesale, but there is a more precautionary tone in regulatory action towards Big AI. Others emphasize agency: civil society must develop the skills to critically engage with AI infrastructures in order to shape them. There is no rejection of regulation or precaution, but emphasis on co-opting the emerging AI ecosystem away from Big AI. Moreover, industry and innovation – as developers and users of AI – is not monolithic; there are companies, or departments and individuals within companies, that should be allies.

In the same vein, the structure versus agency perspectives differ on whether AI development will continue on a trajectory of extended hype or will normalize sooner rather than later. In the former view, Big AI continues to hype transformative potentials, spur over-investment and infrastructure expansion, and drive policy capture for an indeterminate period. Accordingly, a more precautionary and regulatory tack is needed. In the latter view, AI will follow the same hype cycle as all novel technologies do, and eventually file down into luxury, everyday, trivial, value-added, and obsolete functions that can be sensibly governed. Here, public participation to nudge the AI ecosystem is paramount. Most interviewees believe that AI infrastructure will inevitably settle into a less hype-driven state; as one interviewee noted, 'These things do shake out – they just don't shake out on the time scales we like' (Interview 3). The differences in emphasis emerge on the harms done in that near to mid-term time scale.

Interviewees and ENGO reports (Kazansky *et al.* 2022, Hilliger *et al.* 2025; GSC *et al.* 2025) argue that digital, climate, and energy justice are intertwined, and this conceptualization already serves as the basis for coalition building (section 4.1). This bridging work, however, is still in its early days. Interviewees acknowledge that as more non-profits adopt AI tools, latent tensions will need to be overcome. Traditional ENGOs or movements based on fossil fuel phaseout do not have a core focus on

digital rights, or vice versa. Resource-strapped development or humanitarian organizations might be more concerned with how AI can immediately improve their operations than with energy costs or downstream climate harms. Even when focused on energy, organizations might focus more on AI potentials for efficiency than overall costs or the Jevons paradox.

Navigating these tensions will be shaped by ENGO personnel and capacities. Firstly: initial ENGO efforts on AI governance are led by often self-selected personnel with digital and environmental interests. Such persons resist simple juxtapositions (e.g. utopia vs. dystopia, digital vs. environmental justice, or policy campaigner vs. technologist interests), and work together to produce common outputs. However, it is not clear that these early movers will maintain the framing and networking capacities they currently have, and if they will be able to entrench the themes in section 4.1 in their organizations or the sector at large.

Secondly, many smaller ENGOs (e.g. less formalized, grassroots organizations or networks) may not have the inclination or capacity to develop their own positions on a fast-moving, technology-oriented debate like AI. This leads to delegation: first-movers within umbrella-based or federated networks provide the initial direction for many other ENGOs who subscribe to positions that they might not have played a strong role in developing. As noted earlier, engaging with AI often further defaults within organizations to technologists and their networks. For some interviewees, this arrangement is for now pragmatic, and useful for confronting much more well-resourced AI-development or fossil fuel industry actors. For other interviewees, delegation represents a 'lack of campaigning maturity' (Interview 8), and there is a need for widespread civic engagement with AI in order to increase interest in how AI is developed. One interview notes that diverse consideration of AI is more important than a consensus of 'one collective vision of what "responsible AI" looks like' (Interview 8).

Thirdly, interviewees hint at competing impulses that stem from the resilient bottom-up culture of the ENGO sector. ENGOs often seek safety in numbers on emerging issues or 'move at the speed of other NGOs' (Interview 5). However, ENGOs also prize their own agency and independence. Some ENGOs adhere to the principle of having 'no permanent allies' to maximize flexibility. As noted before, even those few ENGOs clearly engaged in the AI governance space have varying mandates, structures, research and campaigning capacities, and willingness to engage with governmental and private sector actors (Table 2). The urgent need for collective action against Big AI may be in tension with the need to develop capacity in a more measured, considered way throughout the ENGO ecosystem.

Citing combinations of these rationales – safety in numbers, delegation, navigating diversity versus consensus in the face of Big AI pressures,

forestalling trade-offs between digital and climate concerns – all interviewees call for further sectoral networking. Calls for networking are pragmatic, noting that different rationales and objectives would lead to some conflict in practice, and foregrounding the need to agree on core elements (section 4.1) while bracketing others. The broad objective is not consensus, but a working overview of ENGO positions for first-mover personnel to understand what 'enables me to move my own organization's position' (Interview 5), 'to have those conversations rather than sleepwalk into the space' (Interview 8), and to 'pool resources, work smartly and also work across different movements, because . . . if we work in a narrowed, siloed way, we can be divided and conquered' (Interview 6).

5. Discussion

This section discusses how agenda-setting efforts for AI governance in the context of energy and climate can be improved (Table 6). A set of efforts and networks is coming into play – but are these sufficient to viably counter Big AI? What are the possibilities for a broader coalition combining climate and digital justice? How can ENGOs and their allies pool their resources and refine their discursive and campaigning tactics? What objectives would a coalition be able to accomplish in terms of internal policy and organizational change, mobilization of publics and other NGOs, and political or legislative change (McCammon and Moon 2015)?

The first task is to recognize that the foundational work to construct a narrative – what Hajer (1993, 1995) terms a 'story-line' for coalition-building – bridging energy, climate and digital justice has already been done. ENGO and broader non-profit sectors will experience tensions as diverse actors are

Table 6. Improving ENGO agenda-setting efforts for AI governance.

(1) A playbook for framing AI challenges and governance that bridges energy, climate and digital justice already exists, and should be deepened rather than recreated.
   - ENGOs and their allies will need spaces for dialogue and clear policy levers to leverage, and be wary of efforts to treat digital, energy, climate, and labour as distinct policy processes.
   - Common threats – e.g. criminalization of civic activism – are an opportunity for common cause.

(2) Establish comparative advantages and areas for collaboration in research, technology development, and civic and policy campaigning on AI.
   - Coordinate assessment of AI as an organization resource for different kinds of NGOs, to avoid AI becoming a source of resource competition.
   - Navigate documented power dynamics between the grassroots and decentralized organizations, and the formalized ones embedded in policy processes.

(3) Link internal protocols for AI tool use, development, and procurement with external policy campaigning within and across organizations
   - Leverage tech-oriented personnel leading the formation of (internal) AI policy as 'bridge-builders' within and across organizations.
   - Consider a theory of technology that would allow ENGOs to engage with diverse technology fields while they are in formation.

compelled to adopt AI tools and stake out positions. In new issues, organizations tend to follow existing objective and affiliations, and 'cross-movement' coalitions combining different issues form less readily (Van Dyke and Amos 2017, Brooker and Meyer 2019). To combine climate and digital justice from first principles as a shared position would be daunting, but such a playbook already exists. The focus on justice is a connector. Justice-based lenses – on the uneven distribution of impacts and decision-making capacities between the powerful and marginalized – have served as an 'sustainable-equity interface' for many coalitions (Alcock 2008). The question is how to create and maintain processes to further develop this narrative.

The institutional and political environment plays a role. ENGOs and their allies will need spaces for dialogue and clear policy levers to leverage. Emerging AI legislation offers such opportunities, as did the AI Summit in Paris that spurred 130 organizations to draft a common statement (GSC *et al.* 2025). At the same time, ENGOs must be wary of efforts to treat digital, energy, climate, and labour as distinct policy processes.

Interestingly, common threats rather than common causes more strongly facilitate coalition formation (Van Dyke and Amos 2017, Brooker and Meyer 2019). The concentration of infrastructure and power in Big AI is growing, and threats to digital and climate justice are becoming more aligned and stark (Brennan *et al.* 2025). With environmental activism increasingly criminalized, authorities could begin to restrict the operational space for civic action deemed in opposition – for examples, through physical intimidation, litigation, administrative restrictions, stigmatization, and pressuring spaces for dialogue (Van der Borgh and Terwindt 2012). Some regard trends in the US and China of 'techno-authoritarianism' (Bremmer 2025). Even in Europe, the need for innovation competitiveness could lead to the erosion of regulatory oversight and marginalization of civic dissent. It will be essential to engage these threats across different issues and movements.

The second task to establish and pool resources and capacities – typically, funds, personnel, expertise, and epistemic authority (Nohrstedt and Heinmiller 2024). Competition over resources often emerges; organizations with less resources are more likely to join coalitions but be dominated by more powerful partners (Van Dyke and Amos 2017, Brooker and Meyer 2019). Allies can establish collaborations based on comparative advantages in research capacity, technology and innovation expertise (regarding AI tools for climate and environmental governance), and campaigning aimed at civic, policy, and business sectors and levers.

Capacities may evolve if AI becomes entrenched. At this agenda-setting stage, nimbler networks within and across ENGOs have driven the most coherent framings and initiatives. Hybrid outfits (Green Web Foundation, We Are Open) also demonstrate the strength of a more entrepeneurial approach, newer mandates, and more flexible professional ties. In time, leading formalized ENGOs

with multi-issue objectives (combinations of energy, environment, sustainability issues), and clear internal structures and divisions of labour, may be better able to allocate personnel towards multiple areas of assessment and campaigning (Van Dyke and Amos 2017, Brooker and Meyer 2019).

Crucially, AI is itself a resource or a purported multiplier of resources. Grappling with the value of AI for achieving their organization's objectives is central to how different ENGOs are forming their internal usage and external campaigning policies. ENGOs and non-profits must coordinate how they assess the value of AI as organization resources. For example, AI usage may filter through documented power dynamics between decentralized grassroots organizations, and formalized counterparts embedded in policy processes (Alcock 2008).

The third task involves linking internal protocols for AI tool use with external policy campaigning. Each can inform the other, and ENGOs should explore this space as a networking, procedural, and substantive tactic. Linkages can be categorized: between technology-oriented personnel at different ENGOs (e.g. the Innovation for Impact network), within ENGOs (e.g. between technology personnel and other teams), between ENGOs and different kinds of non-profits (e.g. hybrids vs. traditional ENGOs; activist vs. formalized NGOs), and between the non-profit and other sectors (e.g. universities, the private sector and AI developers, governmental bodies for AI regulation, funding and innovation).

For now, the tech-oriented personnel leading the formation of (internal) AI policy act as 'bridge-builders' (Rose 2000) between organizations and issue mandates. In that vein, one interviewee plays a leading role in two organizations – there are likely to be other such multi-sited persons. As AI use increases within the ENGO sector, these persons' bridging role organizations might magnify; they might also be overshadowed by other priorities and decision-making centers if trade-offs emerge.

An intriguing possiblity is Interviewee 5's argument about a theory of technology that would allow ENGOs to engage with diverse technology fields while they are in formation. ENGO engagement with novel technologies tends to be reactive and inconsistent, and many interviewees diplomatically note that the sector lacks technological savviness. ENGOs delaying engagement lose opportunities to contest Big AI's discursive structuration (Hajer 1993, 1995) of AI governance – their attempts to normalize expectations of transformative AI, hide resource appropriations and societal impacts, and shape permissive regulations. This is a still-formative stage in the development of AI tools, infrastructure, and policy, demanding clear engagement based on principles of environmental and societal welfare. ENGOs can work with allies in academia on society-oriented assessment and governance of technologies (Bernstein *et al.* 2022) ranging from technologies (intended to be) incremental and situation-grounded to transformative and disruptive

(Hopster 2021), and recognizing the differences between how disruptive innovation is marketed and the reality for social and environmental goods (Coad *et al.* 2021) in a context of power concentration in state-elite complexes in frontier technology development (Bremmer 2025) and criminalization of opposed civic action (Van der Borgh and Terwindt 2012).

6. Conclusion

How are environmental non-governmental organizations setting the agenda on artificial intelligence governance? Traditional (e.g. Greenpeace's archetype) and policy-embedded ENGOs (e.g. European Environmental Bureau or Environmental Defense Fund) are not the first-movers. AI governance efforts have been led by branches of ENGO federations, umbrella campaigning networks, and hybrid organizations equally specialized towards technology governance and digital rights. Efforts within ENGOs are often driven by personnel with positions or interests in innovation and IT, rather than from the main trunk of the organization's agendas. Internal protocols are being developed and haltingly linked to campaigning policy, but it is unclear how well-connected the tech-oriented personnel are to their organization's main decision-makers or rank-and-file. Crucially, there is a piecemeal but collectively coherent playbook combining energy, climate, and digital justice to bridge social movements. However, there are relative emphases on whether AI will inevitably normalize and governance can adjust, versus whether hype will be sustained and harms will escalate. These insights point to a discussion of avenues for improving ENGO agenda-setting efforts (Table 6).

The conversation on AI risk and governance is evolving rapidly, with political and technical developments emerging day-by-day. The climate and energy dimensions of AI development are strategically suppressed by Big AI, and I hope that this paper serves not only as a mapping of arguments, actions, and actors in the ENGO sector that can highlight these dimensions, but as a call for widespread collaboration. It is perhaps fitting to conclude by echoing the thoughts of many interviewees: that the ENGO sector must engage in pragmatic coalition-building, that it already has arguments and networks in place to deepen, and that it must avoid being divided and conquered.

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References

Alcock, F., 2008. Conflicts and coalitions within and across the ENGO community. *Global Environmental Politics*, 8 (4), 66–91. doi:10.1162/glep.2008.8.4.66

Allan, J.I. and Hadden, J., 2017. Exploring the framing power of NGOs in global climate politics. *Environmental Politics*, 26 (4), 600–620. doi:10.1080/09644016.2017.1319017

Bernstein, M.J., *et al*., 2022. The societal readiness thinking tool: a practical resource for maturing the societal readiness of research projects. *Science and Engineering Ethics*, 28 (1), 6. doi:10.1007/s11948-021-00360-3

Bremmer, I., 2025. The technopolar paradox: the frightening fusion of tech power and state power. *Foreign Affairs*. Available from: https://www.foreignaffairs.com/united-states/technopolar-paradox-ian-bremmer-fusion-tech-state-power

Brennan, K., Kak, A., and Myers West, S., 2025. *Artificial power: AI now 2025 landscape*. AI Now Institute. Available from: https://ainowinstitute.org/2025-landscape

Brooker, M.E. and Meyer, D.S., 2019. Coalitions and the organization of collective action. : D.A. Snow, ed. *The Wiley Blackwell companion to social movements*. 2nd ed., pp. 253–268. New Jersey: John Wiley & Sons.

Clarke, V. and Braun, V., 2017. Thematic analysis. *The Journal of Positive Psychology*, 12 (3), 297–298. doi:10.1080/17439760.2016.1262613

Climate Action Against Disinformation (CAAD). 2024. Friends of the Earth, Global Action Plan, Greenpeace, Kairos. *Artificial intelligence threats to climate change*. Available from: https://foe.org/wp-content/uploads/2024/03/AI_Climate_Disinfo_v6_031224.pdf

Coad, A., *et al*., 2021. Editorial: The dark side of innovation. *Industry and Innovation*, 28 (1), 102–112. doi:10.1080/13662716.2020.1818555

Cook, G., *et al*., 2017. *Clicking clean: who is winning the race to build a green internet?* Greenpeace. Available from: https://www.greenpeace.org/international/publication/6826/clicking-clean-2017/

Cools, H., Van Gorp, B., and Opgenhaffen, M., 2024. Where exactly between utopia and dystopia? A framing analysis of AI and automation in US newspapers. *Journalism*, 25 (1), 3–21. doi:10.1177/14648849221122647

Dauvergne, P., 2020. The globalization of artificial intelligence: consequences for the politics of environmentalism. *Globalizations*, 18 (2), 285–299. doi:10.1080/14747731.2020.1785670

Djeffal, C., Siewert, M.B., and Wurster, S., 2022. Role of the state and responsibility in governing artificial intelligence: a comparative analysis of AI strategies. *Journal of European Public Policy*, 29 (11), 11, 1799–1821. doi:10.1080/13501763.2022.2094987

Efthymiou, I.P., Alevizos, A., and Sidiropoulos, S., 2023. The role of artificial intelligence in revolutionizing NGOs' work. *Journal of Politics and Ethics in New Technologies and AI*, 2 (1), 1. doi:10.12681/jpentai.35137

Francisco, M. and Linner, B.-O., 2023. AI and the governance of sustainable development. An idea analysis of the European Union, the United Nations, and the World Economic Forum. *Environmental Science & Policy*, 150, 103509. doi:10.1016/j.envsci.2023.103590

Green Screen Coalition (GSC) and Green Web Foundation, Beyond fossil fuels, aspiration, critical infrastructure lab (2025) *Within bounds: limiting AI's environmental impact*. Available from: https://greenscreen.network/en/blog/within-bounds-limiting-ai-environmental-impact/

Hajer, M., 1993. Discourse coalitions and the institutionalization of practice: The case of acid rain in Britain. : F. Fischer and J. Forester, eds. *The argumentative turn in policy analysis and planning*, pp. 43–76. London: Duke University Press.

Hajer, M., 1995. *The politics of environmental discourse: ecological modernization and the policy process*. Oxford: Oxford University Press.

Heath, S., Fuller, A., and Johnston, B., 2009. Chasing shadows: defining network boundaries in qualitative social network analysis. *Qualitative Research*, 9, 645. doi:10.1177/1468794109343631

Hilliger, L., Belshaw, D., and Stevens, M., 2025. *Harnessing AI for environmental justice*. We are Open Cooperative and Friends of the Earth (England, Wales and Northern Ireland). Available from: https://policy.friendsoftheearth.uk/reports/harnessing-ai-environmental-justice

Hopster, J., 2021. What are socially disruptive technologies? *Technology in Society*, 67, 101705. doi:10.1016/j.techsoc.2021.101750

International Energy Agency (IEA), 2025. *Energy and AI*. Available from: https://www.iea.org/reports/energy-and-ai

Jansson, O. and Bengtsson, V., 2025. *How AI can unlock green transformation*. WWF-Sweden and AI Sweden. Available from: https://wwfint.awsassets.panda.org/downloads/report_unlocking_green_transformation_2025-02-13_embargoed.pdf

Kazansky, B., *et al*., 2022. *At the confluence of digital rights and climate & environmental justice: a landscape review*. Available from: https://engn.it/climatejusticedigitalrights

Keck, M. and Sikkink, K., 1998. *Activists beyond borders: advocacy networks in international politics*. NY: Cornell University Press.

Khanal, S., Zhang, H., and Taeihagh, A., 2025. Why and how is the power of big tech increasing in the policy process? The case of generative AI. *Policy and Society*, 44 (1), 52–69. doi:10.1093/polsoc/puae012

Low, S., 2025. *Atlas.ti file - qualitative data analysis of ENGO reports and transcripts on AI governance* [data set]. Zenodo. 10.5281/zenodo.16418052

McArdle, J. and Terrase, P., 2025. *Ystem overload: how data centers could throw Europe's energy transition off course*. Beyond fossil fuels. Available from: https://beyondfossilfuels.org/2025/02/10/system-overload-how-new-data-centres-could-throw-europes-energy-transition-off-course/

McCammon, H.J. and Moon, M., 2015. Social movement coalitions. *In*: D.D. Porta and M. Diani, eds. *The Oxford handbook of social movements*. Oxford: Oxford University Press, 326–339.

Muldoon, J., Valvidia, A., and Badger, A., 2025. *The politics of artificial intelligence supply chains*. doi:10.1007/s00146-025-02625-y

Nelson, L.K. and King, B.G., 2020. The meaning of action: linking goal orientation, tactics, and strategies in the environmental movement. *Mobilization*, 25 (3), 315–338.

Nohrstedt, D. and Heinmiller, T., 2024. Advocacy coalitions as political organizations. *Policy and Society*, 43 (3), 304–316. doi:10.1093/polsoc/puae005

Nost, E. and Colven, E., 2022. Earth for AI: a political ecology of data-driven climate initiatives. *Geoforum*, 130, 23–34. doi:10.1016/j.geoforum.2022.01.016

Rose, F., 2000. *Coalitions across the class divide: lessons from the labor, peace, and environmental movements*. Ithaca, NY: Cornell University Press.

Safir, A.H. and Sharma, S., 2025. Networks, narratives and neocoloniality of AI for climate action. *Big Data and Society*, 12 (2). doi:10.1177/20539517251334095

Schmitz, H.P., *et al.*, 2020. Democratizing advocacy? How digital tools shape international non-governmental activism. *Journal of Information Technology & Politics*, 17 (2), 174–191. doi:10.1080/19331681.2019.1710643

Smith, H. and Adams, C., 2024. *Thinking about using AI?* Green Web Foundation. Available from: https://www.thegreenwebfoundation.org/publications/report-ai-environmental-impact/

Ulnicane, I., 2022. Emerging technology for economic competitiveness or societal challenges? Framing purpose in artificial intelligence policy. *Global Public Policy and Governance*, 2, 326–345. doi:10.1007/s43508-022-00049-8

Van der Borgh, C. and Terwindt, C., 2012. Shrinking operational space of NGOs – a framework of analysis. *Development in Practice*, 22 (8), 1065–1081. doi:10.1080/09614524.2012.714745

Van der Vlist, F., Helmond, A., and Ferrari, F., 2024. Big AI: Cloud infrastructure dependence and the industrialisation of artificial intelligence. *Big Data & Society*, 11 (1). doi:10.1177/20539517241232630

Van Dyke, N. and Amos, B., 2017. Social movement coalitions: formation, longevity, and success. *Sociology Compass*, 11 (7), e12489. doi:10.1111/soc4.12489

Van Hulst, M., *et al.*, 2025. Discourse, framing and narrative: three ways of doing critical, interpretive policy analysis. *Critical Policy Studies*, 19 (1), 74–96. doi:10.1080/19460171.2024.2326936.

Vermeulen, B. and Pyka, A., 2024. The twin digital and green transition: paradigm shift or tech fix? *Journal of Innovation Economics & Management*, 3. doi:10.3917/jie.045.0001